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**Amendments to Claims:**

Please amend the claims as in the following listing:

What is claimed is:

1. (original) A magnetic head comprising:
  - 1 a read sensor including:
  - 2 a free layer;
  - 3 a spacer layer;
  - 4 a plurality of self-pinned layers, said self-pinned layers including
  - 5 interleaved layers of ferromagnetic material and non-magnetic metal.
- 1 2. (original) The magnetic head of claim 1, wherein:
  - 2 said plurality of self-pinned layers includes AP1 and AP2, where AP1 includes an
  - 3 odd number of layers of ferromagnetic material.
- 1 3. (currently amended) The magnetic head of claim [3] 2, wherein:
  - 2 said AP1 and said AP2 together have a net magnetic moment  $dM=0$ .
- 1 4. (original) The magnetic head of claim 3, wherein:
  - 2 said  $dM=0$  corresponds to a  $dT$  less than  $5 \times 10^{-10}$  meters, where magnetic
  - 3 thickness  $T = M \times t$ , and  $M$  equals magnetization,  $t$  equals thickness of material, and  $dT$
  - 4 is the differential in the layer thicknesses.
- 1 5. (original) The magnetic head of claim 1, wherein:
  - 2 said plurality of self-pinned layers has  $H_k > 200$  Oe.
- 1 6. (original) The magnetic head of claim 1, wherein:
  - 2 said plurality of self-pinned layers is pinned by magnetostrictive anisotropy.
- 1 7. (original) The magnetic head of claim 1, wherein:
  - 2 said ferromagnetic material of said plurality of self-pinned layers is chosen from a
  - 3 group consisting of CoFe, CoFe/NiFe, and Fe.
- 1 8. (original) The magnetic head of claim 1, wherein:
  - 2 said non-magnetic metal of said plurality of self-pinned layers is chosen from a
  - 3 group consisting of Ru, Cr, Ir, Cu, Rh, and Re.
- 1 9. (original) The magnetic head of claim 1, wherein:
  - 2 said read sensor is of Current Perpendicular to the Plane (CPP) configuration.
- 1 10. (original) A disk drive comprising:
  - 2 at least one hard disk;

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3 at least one magnetic head adapted to fly over said hard disk for writing data on  
4 said hard disk, and having an air bearing surface, said magnetic head including:  
5 a read sensor including:  
6 a free layer;  
7 a spacer layer;  
8 a plurality of self-pinned layers, said self-pinned layers including  
9 interleaved layers of ferromagnetic material and non-magnetic metal.

1 11. (original) The disk drive of claim 10, wherein:  
2 said plurality of self-pinned layers includes AP1 and AP2, where AP1 includes an  
3 odd number of layers of ferromagnetic material.

1 12. (original) The disk drive of claim 11, wherein:  
2 said AP1 and said AP2 have a net magnetic moment  $dM=0$ .

1 13. (original) The disk drive of claim 12, wherein:  
2 said  $dM=0$  corresponds to a  $dT$  less than  $5 \times 10^{-10}$  meters, where magnetic  
3 thickness  $T = M \times t$ , and  $M$  equals magnetization,  $t$  equals thickness of material, and  $dT$   
4 is the differential in the layer thicknesses.

1 14. (original) The disk drive of claim 10, wherein:  
2 said plurality of self-pinned layers has  $H_k > 200$  Oe.

1 15. (original) The disk drive of claim 10, wherein:  
2 said plurality of self-pinned layers is pinned by magnetostriuctive anisotropy.

1 16. (original) The disk drive of claim 10, wherein:  
2 said ferromagnetic material of said plurality of self-pinned layers is chosen from a  
3 group consisting of CoFe, CoFe/NiFe, and Fe.

1 17. (original) The disk drive of claim 10, wherein:  
2 said non-magnetic metal of said plurality of self-pinned layers is chosen from a  
3 group consisting of Ru, Cr, Ir, Cu, Rh, and Re.

1 18. (original) The disk drive of claim 10, wherein:  
2 said read sensor is of Current Perpendicular to the Plane (CPP) configuration.

1 19. (original) A method of fabrication of a read head sensor of a magnetic head,  
2 comprising:  
3 A) fabricating a plurality of self-pinned layers including interleaved layers of  
4 ferromagnetic material and non-magnetic metal;  
5 B) fabricating a spacer layer above said plurality of self-pinned layers; and  
6 C) fabricating a free layer on said spacer layer.

1 20. (original) The method of fabrication of claim 19, wherein:  
2 said plurality of self-pinned layers of A) have  $dM=0$ .

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- 1 21. (original) The method of fabrication of claim 20, wherein:  
2 said  $dM=0$  corresponds to a  $dT$  less than  $5 \times 10^{-10}$  meters, where magnetic  
3 thickness  $T = M \times t$ , and  $M$  equals magnetization,  $t$  equals thickness of material, and  $dT$   
4 is the differential in the layer thicknesses.
- 1 22. (original) The method of fabrication of claim 19, wherein:  
2 said plurality of self-pinned layers has  $H_k > 200$  Oe.
- 1 23. (original) The method of fabrication of claim 19, wherein:  
2 said plurality of self-pinned layers is pinned by magnetostrictive anisotropy.